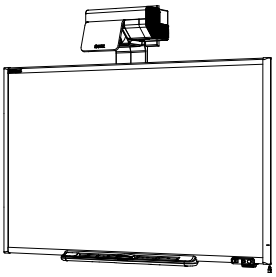

SMART Board 685ix Interactive Whiteboard System

Condensed Configuration and User's Guide

IMPORTANT

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Extraordinary made simple™

Product Registration

If you register your SMART product, we'll notify you of new features and software upgrades.

Register online at www.smarttech.com/registration.

Keep the following information available in case you need to contact SMART Technical Support.

Serial Number: _____

Date of Purchase: _____

FCC Warning
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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SMART Board™ 685ix interactive whiteboard system Patent No. US5448263; US6141000; US6320597; US6326954; US6337681; US6540366; US6741267; US6747636; US7151533; US72891133; US7499033; CA2058219; and CA2252302. Other patents pending. UX60 projector system Patent No. US6540366. Other patents pending.

08/2009

Introduction

Important Information

Read This Section First

NOTE

If you own a SMART product other than a SMART Board™ 685ix interactive whiteboard system, refer to the installation guide that came with your product for relevant warnings and maintenance instructions.

In this document, “SMART Board 685ix interactive whiteboard system” refers to the SMART Board 685 interactive whiteboard and its UX60 projector, accessories and optional equipment. Before you install and use the SMART Board 685ix interactive whiteboard system, read and understand the safety warnings and precautions in this user’s guide, the interactive whiteboard user’s guide and the warnings document. These safety warnings and precautions describe the safe and correct operation of the interactive whiteboard system and its accessories, helping you prevent injuries and equipment damage. You must always ensure that the interactive whiteboard system is being used correctly.

The UX60 projector included with your system is designed to work with certain SMART Board interactive whiteboard models only. Contact your authorized SMART reseller for more information.

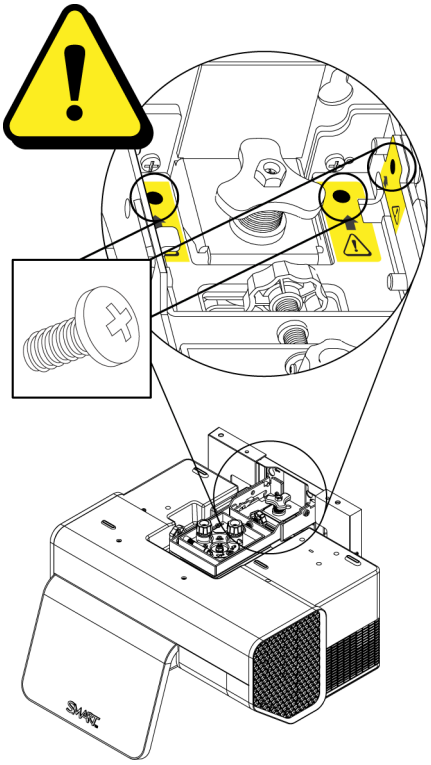
Safety Warnings, Cautions and Important Information

WARNINGS – GENERAL

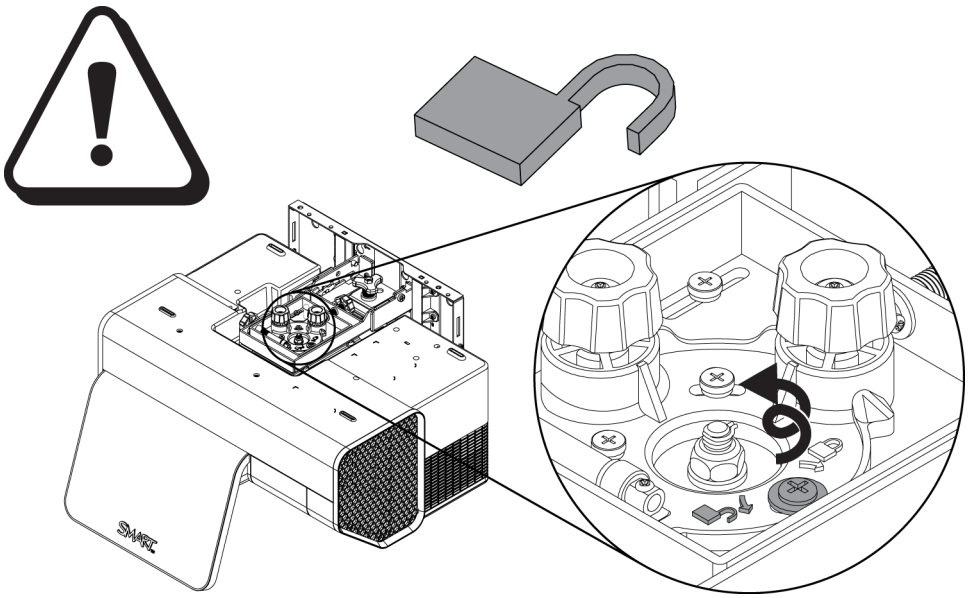
- Do not climb (or allow children to climb) on any part of your wall-mounted SMART Board interactive whiteboard system.
- Climbing on the interactive whiteboard or projector boom could result in personal injury or product damage. Do not climb on, hang from or suspend objects from the UX60 projector.
- To reduce the risk of fire or electric shock, do not expose any component of your SMART Board interactive whiteboard system to rain or moisture.

Part No. 99-00984-20 REV A0

- Failure to follow the installation instructions shipped with your SMART product could result in personal injury and damage to the product.
- If you remove the three screws supporting the adjustment module, the projector will be free to move on the wall-mounting bracket's track. Make sure that the screws are tightened.
- Make sure that an electrical socket is near your SMART product and remains easily accessible during use.
- Two people are required to mount the projector and the interactive whiteboard on a wall because they could be too heavy for one person to maneuver onto their wall-mounting brackets.
- When mounting the projector on a framed or hollow wall, you must attach both the mounting bracket and safety tether to a stud to safely support the projector's weight. If you use only drywall anchors, the drywall can fail, resulting in product damage and possible personal injury.



- When adjusting the projector's image, only loosen the locking screw next to the lock and unlock symbols (see the following illustration in grey). Never loosen other screws or loosen the center nut attached to the projector bolt as your projector may fall.



- Ensure that any cables extending across the floor to your SMART product are properly bundled and marked to prevent a trip hazard.
- Cleaning a wall-mounted projector can result in a fall or injury. Use caution when climbing a ladder, or remove the projector from the wall-mounting bracket to clean it.

WARNINGS – PROJECTOR

- Do not stare (or allow children to stare) directly into the beam of light created by the projector. Instruct children not to look in the direction of, or stare at, this beam of light. Encourage users to keep their back to the projector when working at the interactive whiteboard. Before they turn to face the audience, users should step sideways, out of the projector's beam.
- Do not attempt to service the projector other than performing routine lamp replacement. Other than the lamp module, there are no user-serviceable parts inside the unit. Do not open or disassemble the projector as this may cause electric shock.
- This projector detects its remaining lamp life. Replace the lamp when a lamp life warning message appears. If you continue to use the projector after the replacement message appears, the lamp can shatter or burst, scattering glass throughout the projector.

- If the lamp has shattered or burst:
  - Call an authorized SMART reseller for instructions. Do not attempt to replace the lamp.
  - Do not touch the glass fragments because they can cause injury.
  - Leave and then ventilate the area where the lamp shattered or burst.
  - Wash your hands thoroughly if you have come into contact with lamp debris.
  - Thoroughly clean the area around the projector, and discard any edible items placed in that area because they could be contaminated.
- Replacing the lamp in a wall-mounted projector can result in a fall or injury. Use caution when climbing a ladder, or remove the projector from the wall-mounting bracket to replace the lamp.
  - Uncovering the lamp while the projector is mounted on the wall-mounting bracket can lead to product damage or personal injury from falling pieces of glass if the lamp is broken.
- When replacing the projector lamp:
  - Turn off the projector and wait 30 minutes for the lamp to cool completely (or before removing the projector from the wall-mounting bracket, if necessary).
  - Do not remove any screws other than those specified in the lamp replacement instructions.
  - Wear protective eyewear while changing the lamp. Failure to do so can cause injury or loss of eyesight if the lamp shatters or bursts.
  - Use only replacement lamps approved by SMART Technologies. Contact your authorized SMART reseller for replacement parts.
  - Never replace the lamp assembly with a previously-used lamp assembly.
  - To prevent premature lamp failure or exposure to mercury, always handle the fragile lamp assembly with care. Use gloves when touching the lamp. Do not touch the lamp with your fingers.
  - Recycle or dispose of the lamp as hazardous waste, in accordance with local regulations.
- When returning the projector to the wall-mounting bracket, replace all of the screws you removed when you removed the projector. Failure to do so can result in the projector falling from the boom resulting in injury or equipment damage.

- Reduce the risk associated with a leaking battery in your projector's remote control:
  - Use only the specified coin-cell type battery
  - Orient the battery's plus (+) and minus (-) terminals according to the markings on the remote control
  - Remove the battery when the remote control is unused for an extended period
  - Do not heat, disassemble, short or recharge the battery, or expose it to fire or high temperatures
  - Avoid eye and skin contact if the battery has a leak
  - Dispose of the exhausted battery and product components in accordance with applicable regulations

CAUTIONS

- Avoid turning off the projector during the lamp ignition phase because this can lead to premature lamp failure. Before turning off the projector, keep the lamp on for a minimum of 15 minutes after turning it on to preserve the lamp life.
- When you switch the projector off, ensure that the cooling cycle is complete before disconnecting the power. Allow 90 seconds for the projector to complete the cooling cycle.
- Never operate this unit immediately after moving it from a cold location to a warm location. When the unit is exposed to such a change in temperature, moisture can condense on the lens and crucial internal parts. Allow the system to reach room temperature before operation to prevent possible damage to the unit.
- In a high altitude location where the altitude is over 6000' (1829 m), where the air is thin, cooling efficiency is reduced, so use the projector with the fan mode set to High.
- Do not block the projector's ventilation slots and openings.
- Do not place in hot locations, such as near heating equipment. Doing so could cause a malfunction and shorten the life of the projector.
- Do not set up or use the interactive whiteboard system in an area with excessive levels of dust, dirt, humidity or smoke.
- Before you clean the UX60 projector, put the system into Idle mode by pressing the power button twice on the ECP or remote and allow the bulb to cool for at least 30 minutes.

- Do not allow liquids or commercial solvents of any kind to flow into the projector base or head. Do not use spray cleaners or solvents near any part of the projector, because they can damage or stain the unit.
- Cycling power to the projector repeatedly can lock or damage the interactive whiteboard system. After you turn off the system, wait at least 15 minutes for cooling before turning on the system.
- You must connect the USB cable that came with your SMART Board interactive whiteboard to a computer that has a USB compliant interface and that bears the USB logo. In addition, the USB source computer must be compliant with CSA/UL/EN 60950 and bear the CE mark and CSA and/or UL mark(s) for CAS/UL 60950. This is for operating safety and to prevent damage to the SMART Board interactive whiteboard.
- Do not add extra weight or apply pressure to the UX60 projector boom, the wall-mounted interactive whiteboard or its pen tray. SMART Technologies designed the brackets to support only the weight of the components during normal use.
- If the interactive whiteboard system requires replacement parts, make sure that the service technician uses replacement parts specified by SMART Technologies, or parts with the same characteristics as the original.

IMPORTANT

- Turn off the SMART product before cleaning it.
- Using the UX60 projector system near a TV or radio can cause interference to the images or sound. If this happens, move the TV or radio away from the projector.
- Do not place the interactive whiteboard system near any appliance that generates a strong magnetic field.
- Do not place the interactive whiteboard system in direct sunlight.
- The screws that secure the interactive whiteboard to the wall are located directly behind the pen tray. The pen tray must be removed before you can remove the interactive whiteboard. When you secure the pen tray, you also secure the interactive whiteboard.
- The SMART Board 685ix interactive whiteboard system does not include speakers. Consult your authorized SMART reseller to determine your audio output options.
- If you have peripheral devices that do not use a 4-pin mini-DIN connector, an HDMI connector or an RCA composite video jack, or if your device has an audio connection that does not use RCA jacks or 3.5 mm plugs, you might need to purchase third-party adapters.

- Disconnect the product from its power source when it is not used for a long period.
- When cleaning the interactive whiteboard system:
  - Wipe the exterior of the projector using a lint-free cloth
  - If necessary, use a soft cloth moistened with a mild detergent to clean the projector housing.
  - Do not use abrasive cleaners, waxes or solvents

Transporting the SMART Board 685ix Interactive Whiteboard System

If you need to ship any part of your SMART Board 685ix interactive whiteboard system, repack it with the original packaging. If the original packaging is no longer available, you can purchase replacement packaging from your authorized SMART reseller.

If you prefer to use your own packaging materials, make sure that you adequately protect the unit. Ship the interactive whiteboard in an upright position to deter shippers from placing heavy objects on it.

Contents

Product Registration ..... B

Important Information i

Read This Section First i

Safety Warnings, Cautions and Important Information i

Transporting the SMART Board 685ix Interactive Whiteboard System vii

Contents ix

1 About Your SMART Board 685ix Interactive Whiteboard System 1

SMART Board 685ix Interactive Whiteboard System Features 2

SMART Board Interactive Whiteboard Features 2

UX60 Projector System Features 3

Standard Accessories 5

Standard SMART Board Interactive Whiteboard Accessories 5

Standard UX60 Projector Accessories 5

Optional Accessories 7

SMART Board Audio (SBA) USB Speakers 7

GoWire SMART Notebook Software Auto-launch Cable (USB-GW) 7

Active USB Extension Cables (USB-XT) 7

Cat 5 to USB Cable Extender (CAT5-XT) 7

2 Controlling Your UX60 Projector 9

Components of the UX60 Projector 10

UX60 Projector Connection Diagram 11

Remote Control 12

Remote Control Battery 12

Using Your Projector Controls 14
Using Your Remote Control 15
Understanding Your ECP Functions 16
ECP Connection Diagram 17

3 Before Installing Your SMART Board 685ix Interactive Whiteboard System 19
Environmental Requirements 20
Humidity 20
Water and Fluid Resistance 20
Dust and Scratching 21
Electrostatic Discharge (ESD) 21
Cables 21
Conducted and Radiated Emissions 21
Before Installing Your SMART Board 685ix Interactive Whiteboard System 21

4 Integrating Other Devices To Your Interactive Whiteboard System 23
Connecting Peripheral Devices to Your Interactive Whiteboard System 23
Attaching Sources and Outputs to Your UX60 Projector 24
Attaching Temporary Sources and Outputs to Your ECP 26
Connecting Computers to Your Interactive Whiteboard System 27
Connecting Your Computer to the UX60 Projector 27
Connecting Your Computer to the Wire Management Bundle 27
Installing SMART Notebook Software 28
Installing SMART Notebook Software 28
Using a GoWire Cable with Your Interactive Whiteboard System 28

5 Maintaining and Troubleshooting Your SMART Board 685ix Interactive Whiteboard System 29
Maintaining Your SMART Board 685ix Interactive Whiteboard System 31
Preventing Damage to Your Interactive Whiteboard 31
Cleaning Your Interactive Whiteboard 31
Cleaning the Pen Tray 32

Cleaning the UX60 Projector 33
After Installing Your SMART Board 685ix Interactive Whiteboard System ... 34
Adjusting Keystone Alignment 34
Focusing the Image 35
Aligning the Image 36
Securing the Pen Tray and the Interactive Whiteboard 40
Replacing the UX60 Projector's Lamp Module 41
Troubleshooting Your SMART Board 685ix Interactive Whiteboard System 44
System Warning Lights 45
Video Format Compatibility Modes 47
HD and SD Format Compatibility 47
Video System Signal Compatibility 48

A Hardware Environmental Compliance 49
Waste Electrical and Electronic Equipment Regulations (WEEE Directive) 49
Restriction of Certain Hazardous Substances (RoHS Directive) 49
Batteries 49
Packaging 50
China's Electronic Information Products Regulations 50
U.S. Consumer Product Safety Improvement Act 50

B Customer Support 51
Online Information and Support 51
Training 51
Technical Support 51
Shipping and Repair Status 51
General Inquiries 52
Warranty 52
Registration 52

Index 53

Chapter 1

About Your SMART Board 685ix Interactive Whiteboard System

IMPORTANT

SMART Technologies frequently updates this document to provide accurate support. For the most recent version of this document (in English) visit the SMART Support website.

The SMART Board 685ix interactive whiteboard system combines the UX60 wall-mounted, ultra-short-throw projector system with a SMART Board 685ix interactive whiteboard.

Topics in this chapter describe the features and accessories that you can use with your SMART Board 685ix interactive whiteboard system, as well as other compatible products available from SMART.

- SMART Board 685ix Interactive Whiteboard System Features (page 2)
  - SMART Board Interactive Whiteboard Features (page 2)
  - UX60 Projector System Features (page 3)
- Standard Accessories (page 5)
  - Standard SMART Board Interactive Whiteboard Accessories (page 5)
  - Standard UX60 Projector Accessories (page 5)
- Optional Accessories (page 7)
  - SMART Board Audio (SBA) USB Speakers (page 7)
  - GoWire SMART Notebook Software Auto-launch Cable (USB-GW) (page 7)
  - Active USB Extension Cables (USB-XT) (page 7)
  - Cat 5 to USB Cable Extender (CAT5-XT) (page 7)

SMART Board 685ix Interactive Whiteboard System Features

The SMART Board 685ix interactive whiteboard system uses the UX60 WXGA (16:10) ultra-short-throw, high-offset projector. The 685ix interactive whiteboard system delivers high-definition, high performance interactivity that is virtually shadow-free and glare-free.

When the UX60 projector displays an image from a computer on the touch-sensitive interactive whiteboard, you can draw over the image in digital ink using a pen or your finger. This projector also supports video and audio connections from a variety of devices, including DVD/Blu-ray players, VCRs, document cameras, digital cameras and high definition sources, and can project media from these sources onto the interactive screen.

When you use SMART Notebook software with your 685ix interactive whiteboard system, you can write over any Ink Aware applications in digital ink using a pen tray pen or your finger, and then save these notes either in the application or to a SMART Notebook file for future reference and distribution.

SMART Board Interactive Whiteboard Features

The SMART Board 685 interactive whiteboard includes many features of other SMART Board interactive whiteboards, such as a resistive touch screen and a pen tray. The SMART Board 685 performs best with the UX60 projector because of its exceptional color performance, aspect ratio, input response and short-throw image distance.

Other features of the interactive whiteboard include:

- a SMART Pen Tray that automatically detects when you pick up a pen tray pen or the eraser
- pen tray buttons that activate Help functions and, when used with a computer, activate the on-screen keyboard and right-click functions
- a durable hard-coated, tear-proof surface that is optimized for projection and compatible with dry-erase markers, and that cleans easily with whiteboard cleaner
- a standard USB interface to connect the SMART Board interactive whiteboard to the extended control panel
- a security device to prevent theft of the pen tray or the interactive whiteboard

UX60 Projector System Features

The UX60 projector system includes an ultra-short-throw projector for use with SMART Board 685 interactive whiteboards, an extended control panel (ECP), an ECP harness cable and a sturdy support system for classroom environments. The features of the projector system include:

- A wall-mounted, high-offset UX60 projector engine that uses single chip DLP® technology by Texas Instruments®, providing BrilliantColor™ performance, High Contrast, and quality Gamma 2.1 correction with Bright Classroom, Dark Classroom, sRGB, User or SMART Presentation modes
- 16:10 aspect ratio
- 2000 ANSI Lumens (typical)
- PAL, PAL-N, PAL-M, SECAM, NTSC, NTSC 4.43, SDTV (480i/p and 576i/p), HDTV (720p and 1080i) video system compatibility
- Native 1280 × 800 resolution
- UXGA 60 video format compatibility
- Apple® Macintosh®, iMac® and VESA® RGB video format standard compatibility

- Remote management via network through an RJ45 jack

  OR

  Remote management via a serial RS-232 interface
- Self-protection timer for a hot re-strike of the projector lamp
- Protected cable routing through the projector housing, a cable cover and wire management bundle to prevent tampering and clutter
- Cleaning cloth for use on the projector lens and system mirror
- A secure mounting and installation system that includes:
  - Two projector padlock loops
  - Mounting hardware for solid masonry or framed wall installations
- Templates and instructions for positioning the system safely

In addition, the UX60 projector system includes a fully labeled connection panel, which includes the following connection receptacles for the ECP harness cable and your source inputs:

- The ECP harness cable connection receptacles that include:
  - A composite video input (RCA jack) and associated dual-channel audio input (two RCA jacks)
  - A 4-pin powered mini-DIN connector and 7-pin mini-DIN connector
- A 3-pin mini-DIN connector
- S-video input and associated dual-channel audio input (two RCA jacks)
- HDMI digital interface
- Two HD-DB15 (VGA) inputs and associated audio input (3.5 mm jack) and one HD-DB15 (VGA) output and associated audio output (3.5 mm jack) with additional interface support for Component YPbPr and Component YCbCr inputs with proper adapters (not included)
- RJ45 cable for ethernet connections
- RS-232 connector
- USB B receptacle for service access

Standard Accessories

SMART provides the following accessories with your SMART Board 685ix interactive whiteboard system.

Standard SMART Board Interactive Whiteboard Accessories

Pen Tray Tools

The pen tray tools include four pens and an eraser. The pens have a rubberized grip area, colored to match the four colors of digital ink: black, green, red and blue. You can use dry-erase markers instead of the supplied pens, as long as they're a similar shape, don't scratch or mark the surface of the interactive whiteboard. If the pens you provide don't reflect infrared light, the pen tray sensor might not detect the presence of the pen. You can use EXPO® markers or other substitutes.

Pens from earlier interactive whiteboards weren't designed to reflect infrared light, so the pen tray might not detect them reliably. You can wrap light-colored tape around the pen to improve the reflection of infrared light and to help with tool detection.

Eraser

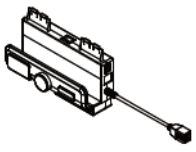
The eraser resembles a rectangular chalkboard eraser. You can use a substitute eraser, provided it has a similar shape, reflects infrared light and doesn't scratch or mark the surface of the interactive whiteboard.

Standard UX60 Projector Accessories

Remote Control

The remote control lets you control the system and set up your UX60 projector. Use the remote control to access menu options, system information and input selection options.

ECP Assembly



The interactive whiteboard system's ECP features controls for power, source selection, volume control and an integrated USB hub. Direct inputs supported include:

- Interactive whiteboard control interface (RJ11 6-wire jack)
- One USB hub with two USB A receptacles
- One USB B receptacle for connecting the primary computer and one USB B receptacle for connecting the secondary computer

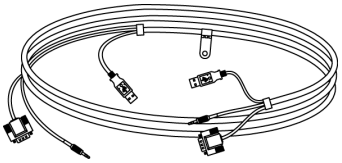
- A composite video input (RCA jack) and associated dual-channel audio input (two RCA jacks)

ECP Harness Cable

A specialized harness cable provided by SMART allows input to be routed to the projector from the ECP. The harness cable includes:

- A DB15M plug for analog video input
- A composite video output (RCA plug) and associated dual-channel audio input (two RCA plugs)
- A 4-pin power-mini-DIN connector and 7-pin mini-DIN connector for ECP functions

Wire Management Bundle



The UX60 projector includes a wire management bundle for easy connection to the projector with the provided USB, HD-DB15 (VGA) connectors and audio inputs in a secondary computer, such as a laptop, or a primary computer, such as a permanently installed tower or desktop.

Cleaning Cloth Kit

The UX60 projector has special cleaning requirements and includes the only approved cleaning cloth for use on the projector mirror or lens.

CAUTION

Do not use any cleaning cloth, compressed solvent and cleaners or compressed air to clean the UX60 projector, except for the cleaning cloth included with your projector. Never scrub the mirror or lens. Use the cleaning cloth delicately.

Optional Accessories

For more information on optional accessories, contact your authorized SMART reseller.

SMART Board Audio (SBA) USB Speakers

Your interactive whiteboard system requires an audio system to deliver presentations with sound. The SBA system consists of a pair of 15-watt, stereo-amplified speakers with a two-port USB hub (not active when installed to the SMART Board 685ix interactive whiteboard system) and a volume control knob. You need a RCA plug to 3.5 mm audio jack cable long enough for your installation conditions (not included).

GoWire SMART Notebook Software Auto-launch Cable (USB-GW)

Your GoWire cable contains SMART Notebook software and launches it automatically on a guest computer, providing full access to all interactive whiteboard software tools without installing SMART Notebook software.

Active USB Extension Cables (USB-XT)

You can connect up to three 16' (5 m) active USB extension cables to extend your interactive whiteboard's USB connection to a maximum of 48' (15 m).

Cat 5 to USB Cable Extender (CAT5-XT)

Use the SMART Cat 5 to USB cable extender to extend your interactive whiteboard's USB connection up to 87' (26.5 m) using RJ45 Cat 5 cable (not included). The extender includes two 6' (1.8 m) USB cables to connect your computer and your interactive whiteboard to the extender units.

Chapter 2

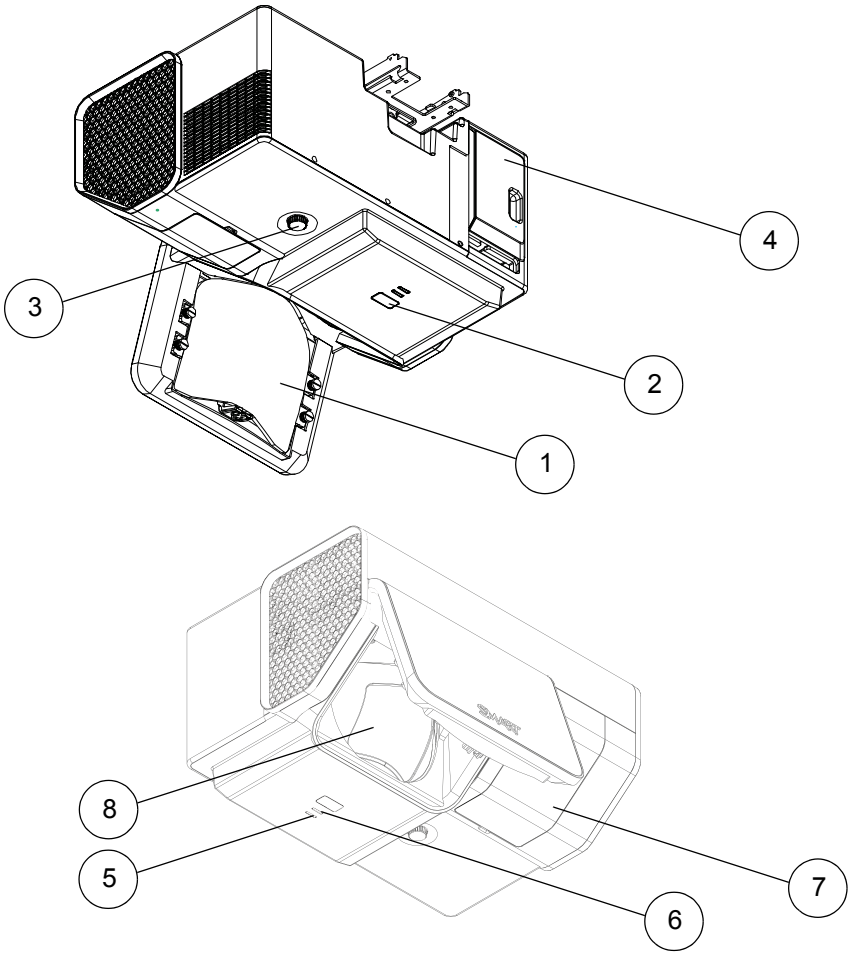
Controlling Your UX60 Projector

This chapter describes the components of your UX60 projector, and the connections on the projector and ECP. It also explains how to set up your remote control and adjust your projector options.

- Components of the UX60 Projector (page 10)
  - UX60 Projector Connection Diagram (page 11)
- Remote Control (page 12)
  - Remote Control Battery (page 12)
  - Using Your Projector Controls (page 14)
  - Using Your Remote Control (page 15)
- Understanding Your ECP Functions (page 16)
  - ECP Connection Diagram (page 17)

Components of the UX60 Projector

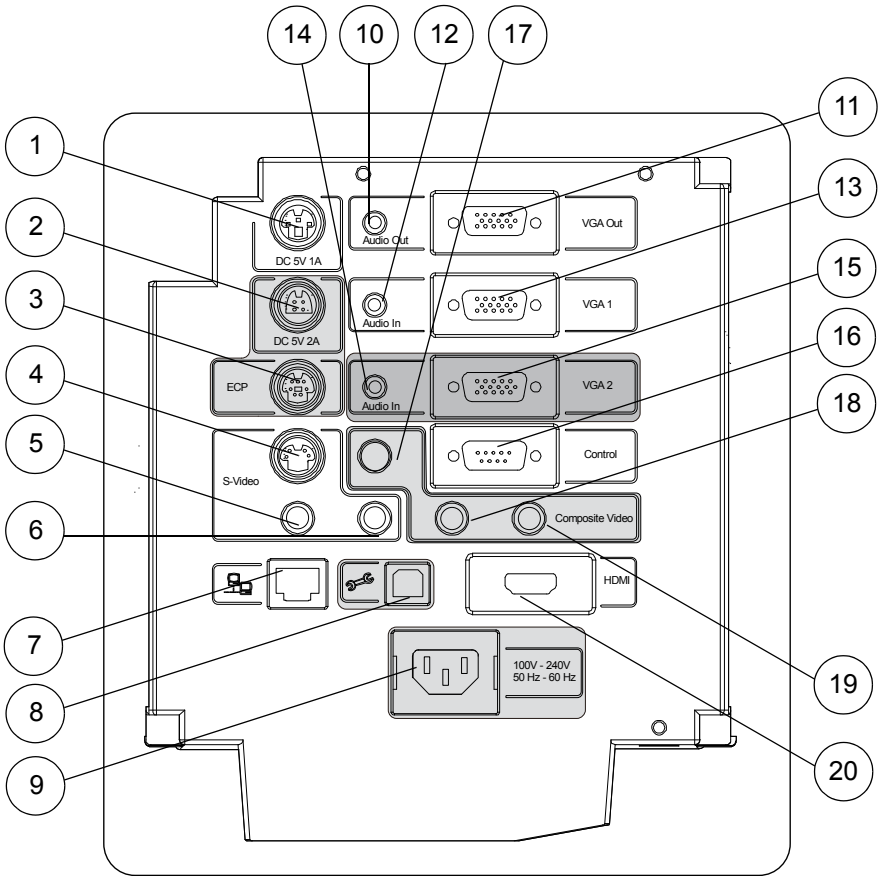
Below is a list of all the components that can be found on the UX60 projector.



1. Image reflection mirror
2. IR receiver
3. Focus knob
4. Input/Output (I/O) cover
5. Diagnostic indicator LED
6. Power indicator LED
7. Lamp cover
8. Lens

UX60 Projector Connection Diagram

The following diagram and list describe the projector's connection ports and the types of input you can connect to the projector. Remove the input/output cover on the left side of the projector to access the connection panel.



1. 3-pin mini-DIN 5V/1A connector
2. 4-pin power-mini-DIN 5V/2A connector (reserved for ECP harness cable)
3. 7-pin mini-DIN connector (reserved for ECP harness cable)
4. S-video input connector
5. RCA jack audio-left input (for S-video input connector)
6. RCA jack audio-right input (for S-video input connector)
7. RJ45 jack for network connections
8. USB B receptacle (reserved for service access)
9. Power inlet
10. 3.5 mm audio-output connector (for VGA Out connector)
11. HD-DB15 (VGA Out) output connector

12. 3.5 mm audio-input connector (for VGA 1 connector)
13. HD-DB15 (VGA 1) input connector (PC analog signal/component video input)
14. 3.5 mm audio-input connector (reserved for wire management bundle)
15. HD-DB15 (VGA 2) input connector (reserved for wire management bundle)
16. RS-232 connector
17. RCA jack composite video input (reserved for ECP harness cable)
18. RCA jack audio-left input (reserved for ECP harness cable)
19. RCA jack audio-right input (reserved for ECP harness cable)
20. HDMI port

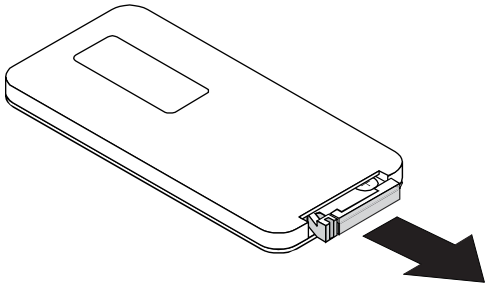
Remote Control

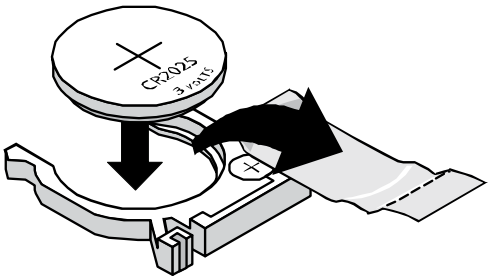
Remote Control Battery

Follow this procedure to use the remote control for the first time or to replace the remote control battery.

To access or replace the remote control battery

1. Turn over the remote control onto its back.
2. Hold down the side release on the left side of the battery holder and pull the battery holder completely out of the remote control.
3. Insert a CR2025 coin cell battery into the battery holder.

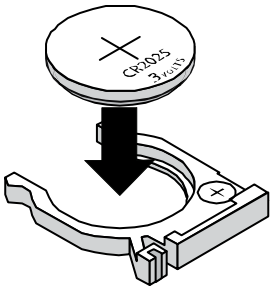




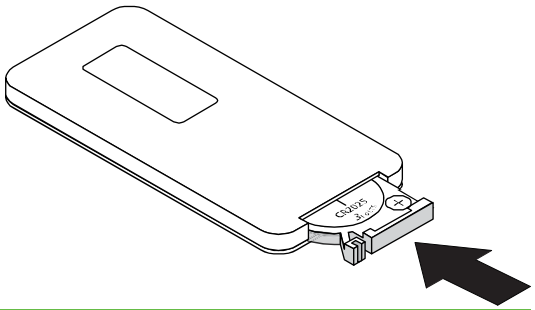
IMPORTANT
Remove the plastic sheet inside the battery holder before you use the remote control for the first time.

TIP

Make sure the positive (+) and negative (-) signs on the battery terminals align with the correct signs on the battery holder.

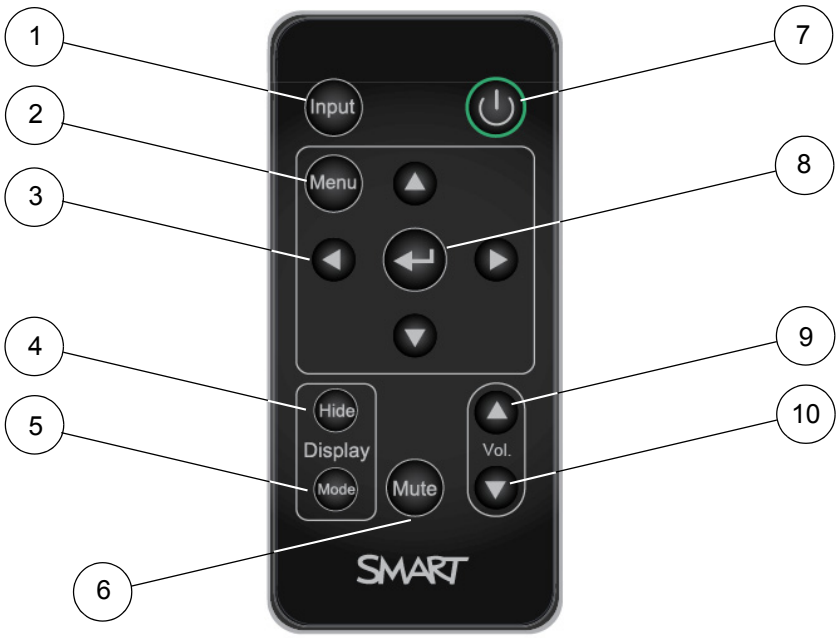


4. Re-insert the battery holder into remote control.



Using Your Projector Controls

The UX60 projector remote control enables you to access on-screen projector menus and change projector settings. You can use the remote control's **Power** button (or, alternatively, the ECP **Power** button) to turn on or turn off the projector system. You can also use the remote control's **Input** button (or, alternatively, the ECP's **Input** button) to switch sources on the projector.



Number	Function	Description
1	Input	Select an input source
2	Menu	Show the projector menus
3	◀ (Left), ▶ (Right), ▲ (Up) and ▼ (Down) arrows	Change the menu selections and adjustments
4	Hide	Hide or display the image
5	Mode	Select a display mode
6	Mute	Control mute settings from your audio-output device (not included)
7	(Power)	Turn on or turn off the projector
8	(Enter)	Accept the selected mode or option
9	▲ (Volume Up)	Increase the volume
10	▼ (Volume Down)	Decrease the volume

Using Your Remote Control

You can access the projector settings by pressing the remote control's **Menu** button. You can also access these menu options by connecting a network cable to the projector, as described on page 24.

NOTE

There are no projector menu options on the ECP. Keep your remote control in a safe place, as the ECP is not meant as a substitute for the remote control.

To adjust settings using the remote control

1. Press the **Power** button once to turn on the projector.
2. Press the **Input** button to select an input source.
3. Press the **Menu** button to display the projector menu.
   a. Press the **Left** or **Right** button to access a menu option, move between menu option settings and select number value settings.
   b. Press the **Up** or **Down** button to select the relevant menu option or adjustment.
   c. Press **Enter** to accept the selected mode or option you choose.
4. Press the **Hide** button to hide or display the source image.
5. Press the **Mode** button to cycle through display modes: Bright Classroom, Dark Classroom, sRGB, User or SMART Presentation.
6. Press the **Mute** button to temporarily mute or un-mute the audio output from your speakers (not included).
7. Press the **Up** or **Down** arrows in the Vol. region to adjust the volume.
8. Press the **Power** button twice to turn off the lamp.

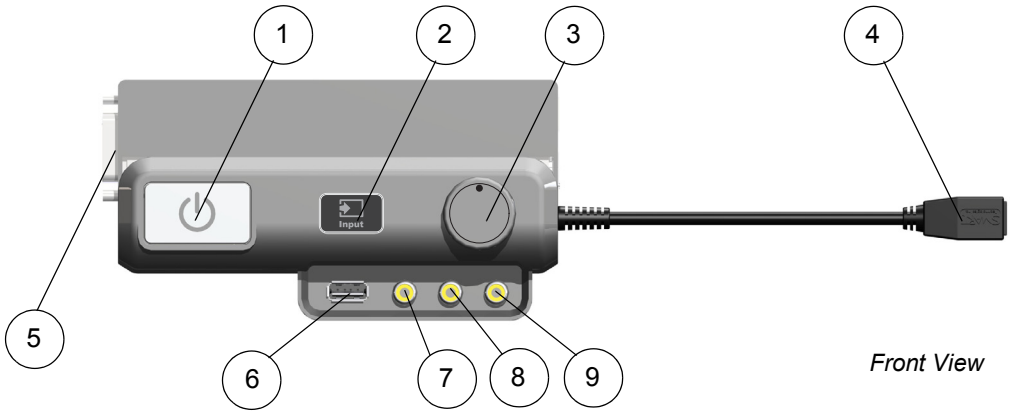
Understanding Your ECP Functions

Your ECP gives you basic control options while you're next to the interactive whiteboard system. Additionally, you can connect some peripheral device sources (or outputs) directly to the ECP, as described on page 26. You can use the ECP's **Power** button (or, alternatively, the remote control's **Power** button) to turn on or turn off the projector system. You can use the **Input** button (or, alternatively, the remote control's **Input** button) to switch sources on the projector.

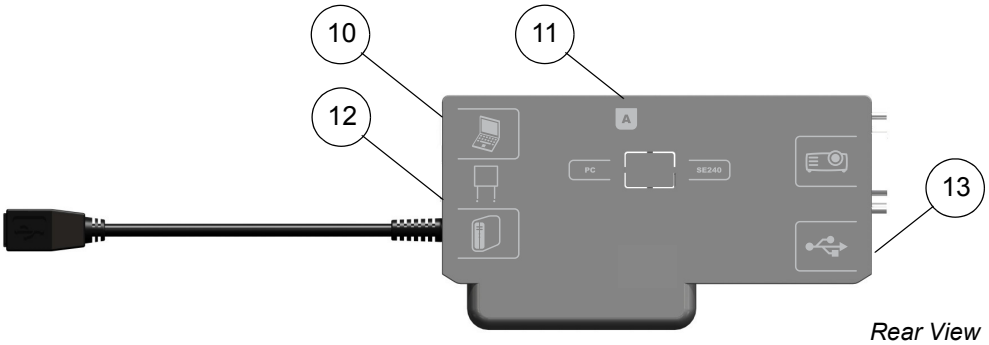
IMPORTANT

- The ECP is not meant as a substitute for the remote control. There are no projector menu options on the ECP, so keep your remote control in a safe place.
- Do not disconnect existing USB plugs on the ECP to connect other peripherals, because you could disconnect controls for the interactive whiteboard, host computer or wire management bundle.

ECP Connection Diagram



Front View



Rear View

Number	Function
1	Power
2	Input
3	Volume control
4	USB B receptacle (for your primary computer)
5	DB15 socket (ECP harness cable only)
6	USB A receptacle (for USB storage devices)
7	RCA jack composite video input (for peripheral devices such as a DVD player)
8	RCA jack audio-right input
9	RCA jack audio-left input
10	USB B receptacle (for secondary computers such as a laptop)
11	RJ11 6-wire jack (for SC9 connector cable)
12	USB A receptacle (SMART Board interactive whiteboard only)
13	USB A receptacle (for any USB peripheral, up to 500mA)

Chapter 3

Before Installing Your SMART Board 685ix Interactive Whiteboard System

Consult the SMART Board 685ix interactive whiteboard system installation documents that came with your UX60 projector for instructions on how to install your products and how to use the mounting template.

IMPORTANT

Use the instructions in the UX60 projector box to install your interactive whiteboard, projector and ECP. The instructions in your SMART Board 685 interactive whiteboard product box do not include instructions for installing the UX60 projector or ECP.

This chapter includes requirements to consider before you install a SMART Board 685ix interactive whiteboard system.

- Environmental Requirements (page 20)
  - Humidity (page 20)
  - Water and Fluid Resistance (page 20)
  - Dust and Scratching (page 21)
  - Electrostatic Discharge (ESD) (page 21)
  - Cables (page 21)
  - Conducted and Radiated Emissions (page 21)
  - Before Installing Your SMART Board 685ix Interactive Whiteboard System (page 21)

Environmental Requirements

Before installing your SMART Board 685ix interactive whiteboard system, review the following environmental requirements.

SMART Board 685ix interactive whiteboard systems can operate in a temperature range of:

- 41°F to 95°F (5°C to 35°C) from sea level to an altitude up to 6000' (0 m to 1829 m)
- 41°F to 86°F (5°C to 30°C) from 6000' to 9800' (1829 m to 2987 m).

The product can withstand storage temperatures from -4°F to 104°F (-20°C to 40°C).

CAUTION

- Never operate this unit immediately after moving it from a cold location to a warm location. When the unit is exposed to such a change in temperature, moisture can condense on the lens and crucial internal parts. Allow the system to stabilize to room temperature before operation to prevent possible damage to the unit.
- In a location at an altitude over 6000' (1829 m), the air is thin and cooling efficiency is reduced, so use the projector with the fan mode set to High.
- Do not place in hot locations, such as near heating equipment. Doing so could cause a malfunction and shorten the life of the projector.

Humidity

SMART Board 685ix interactive whiteboard systems can operate between 30% and 70% humidity, non-condensing. Humidity above 80% can cause slight wrinkling in the sheet of the SMART Board 685ix series interactive whiteboard. The wrinkles disappear once the humidity lowers.

Water and Fluid Resistance

SMART Board 685ix interactive whiteboard systems are for indoor use only and don’t meet any salt-spray or water ingress requirements. Don’t pour or spray any liquids directly onto the interactive whiteboard, the UX60 projector or any of its sub-components. These liquids could get into areas where they could damage sensitive electronic components. Refer to the chapter on maintenance (beginning on page 31) for detailed instructions on cleaning your system’s components.

Dust and Scratching

SMART Board 685ix interactive whiteboard systems are for use in office and classroom environments and are not for industrial use, where heavy dust and pollutants can cause malfunctions or impaired operation. The design is for pollution degree 1 (P1) as per EN61558-1, which is defined as “No pollution or only dry non-conductive pollution.”

Electrostatic Discharge (ESD)

SMART Board 685ix interactive whiteboard systems meet the requirements of EN61000-4-2 severity level 4 for direct and indirect ESD. No malfunction or damage up to 8kV (both polarities) with a 330 ohm, 150 pF probe (air discharge). Unmated connectors meet 4kV (both polarities) for direct (contact) discharge.

Cables

All cables you connect to the SMART Board 685ix interactive whiteboard system should be shielded, to prevent potential accidents and degraded video and audio quality.

Conducted and Radiated Emissions

The narrowband-radiated electric field from SMART Board 685ix interactive whiteboard systems meets the limits for Class A performance as defined in EN55022/ CISPR 22.

Before Installing Your SMART Board 685ix Interactive Whiteboard System

Choose a location for your SMART Board 685ix interactive whiteboard system that is far from bright light sources, such as windows or overhead lighting. Bright light sources can cause distracting shadows on the interactive whiteboard and can reduce the contrast of the projected image.

Locate a wall with a flat, regular surface and minimum clearance to accommodate your interactive whiteboard system. Make sure that the UX60 projector and the SMART Board interactive whiteboard are installed on the same flat surface. For best presentation alignment, SMART recommends that you mount your interactive whiteboard system in a location that is central to your audience’s viewing direction. For mobile installation or adjustable installation options, contact your authorized SMART reseller.

Recommended Mounting Heights

SMART includes a mounting template with each of its SMART Board 685ix interactive whiteboard systems. If you lose this template, contact your authorized SMART reseller. Using this template ensures that you:

- Mount the UX60 projector at a safe height for head space clearance, while maintaining enough space for airflow and installation access above the unit
- Position the projector at the correct height above the 685 series interactive whiteboard to ensure that the projected image aligns with the touch screen

Dimensions on the template recommend a distance from the floor that is suitable for adults of average height. Although you should consider the general height of your user community when you choose a position for the interactive whiteboard, consult your local regulations before mounting the unit.

WARNING

When mounting the projector on a framed wall, you must attach both the mounting bracket and safety tether to a stud to safely support the projector's weight. If you use only drywall anchors, the drywall can fail, resulting in product damage and possible personal injury.

Chapter 4

Integrating Other Devices to Your Interactive Whiteboard System

Topics in this chapter include integrating your SMART Board 685ix interactive whiteboard system with peripheral devices, precautions to follow when connecting a new device to your interactive whiteboard system and basic software installation advice.

- Connecting Peripheral Devices to Your Interactive Whiteboard System (page 23)
  - Attaching Sources and Outputs to Your UX60 Projector (page 24)
  - Attaching Temporary Sources and Outputs to Your ECP (page 26)
- Connecting Computers to Your Interactive Whiteboard System (page 27)
  - Connecting Your Computer to the UX60 Projector (page 27)
  - Connecting Your Computer to the Wire Management Bundle (page 27)
- Installing SMART Notebook Software (page 28)
  - Using a GoWire Cable with Your Interactive Whiteboard System (page 28)

Connecting Peripheral Devices to Your Interactive Whiteboard System

You can connect a variety of peripheral devices to your UX60 projector, including DVD players, VCRs, document cameras, digital cameras and high-definition sources, as well as peripheral device outputs, such as a secondary projector or a flat-panel display and powered speakers. When connecting these devices, don't disconnect existing connections to the ECP, SMART Board interactive whiteboard or other input devices.

Attaching Sources and Outputs to Your UX60 Projector

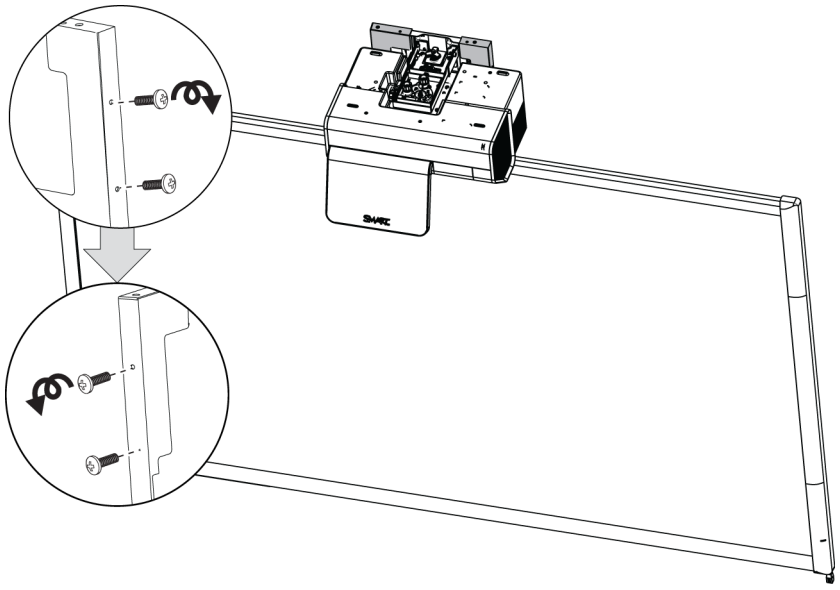
Follow these instructions if you have a peripheral device to connect to your interactive whiteboard system, such as powered speakers, a network connection, a permanently installed device using an HDMI interface, S-video connectors or HD-DB15 connectors.

NOTE

Measure the distance between your projector and the peripheral you want to connect. Make sure each cable is long enough, has plenty of slack and can be placed safely in your room without presenting a tripping hazard.

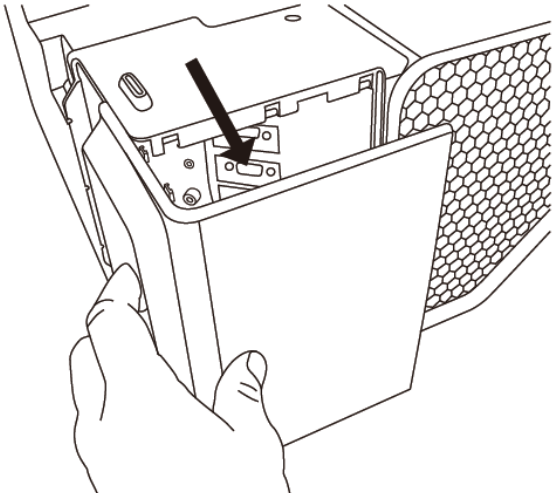
To access the UX60 projector's connection panel

1. Turn off your SMART Board 685ix interactive whiteboard system.
2. Remove the four screws on either side of the projector's wall-mounting bracket cable covers.



3. Remove the cable covers by gently pulling on their sides, away from each other.

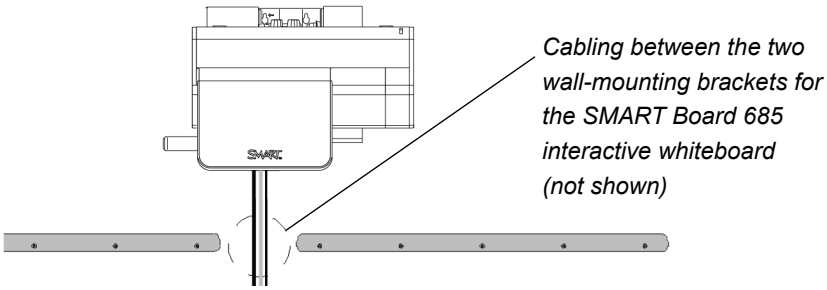
4. Remove the input/output cover by sliding it away from the projector.



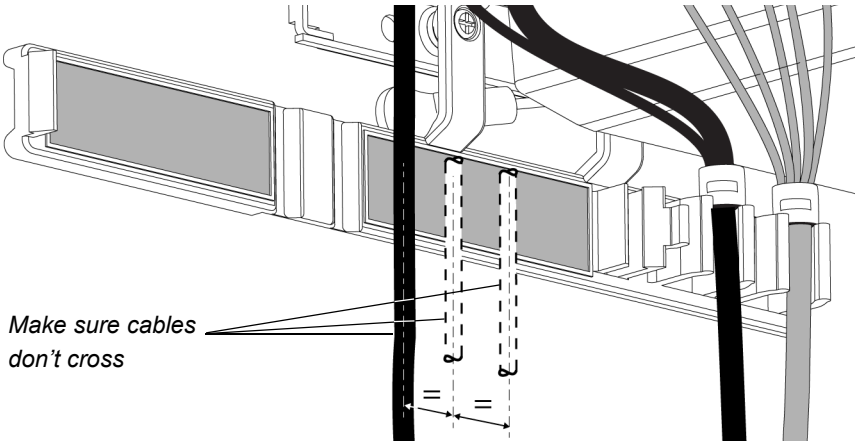
5. Release the latch on the wire management clip.

To connect cables to your UX60 projector

1. Connect your peripheral cables to the projector's connection panel. Do not connect any peripherals into the connectors marked in grey on the diagram on page 11, because these are reserved for the ECP harness and wire management bundle.
2. Place the cables across the wire management clip. Do not close the latch on the wire management clip at this time.
3. Pass the cables between the two wall-mounting brackets behind the interactive whiteboard.



4. Space your peripheral cables equally and give the cables some slack between the clip and projector. Connect the latch on the wire management clip, ensuring that the cables aren't crossed.



5. Connect the other end of the cables to your peripheral devices.
6. Reposition the cable covers on the projector's wall-mounting bracket by gently pushing on their sides, toward each other.
7. Tighten the four screws on either side of the cable covers that you removed in the previous procedure.
8. Reposition the input/output cover by sliding it towards the projector.

Attaching Temporary Sources and Outputs to Your ECP

Follow these instructions if you have a peripheral device to connect to your interactive whiteboard system for a short time, such as a DVD player or laptop or a USB device.

NOTES

- Measure the distance between your projector and the peripheral you want to connect. Make sure each cable is long enough, has plenty of slack and can be placed safely in your room without presenting a tripping hazard.
- Don't disconnect any existing USB cables, because some USB ports are reserved for the ECP harness, wire management bundle, and the interactive whiteboard's SC-9 controller.
- Don't connect SMART Board Audio (SBA) USB speakers to the ECP. SMART recommends that you connect these speakers to the projector connection panel using dual-channel (left and right) RCA plugs to 3.5 mm cable (not included).
- The composite video connector and associated dual channel audio inputs on the ECP are for input only. These RCA jacks don't provide an output signal.

To attach a temporary source or output to your UX60 projector

1. If you have speakers installed, turn the volume dial on the ECP all the way down to prevent buzzing.
2. Connect your peripheral device's cables to the ECP.
3. Switch input sources to the peripheral by pressing the **Input** button on the ECP or remote control.

   OR

   Control output sources through your computer.

Connecting Computers to Your Interactive Whiteboard System

Connecting Your Computer to the UX60 Projector

If you want to permanently connect a computer to your SMART Board interactive whiteboard system, SMART recommends that you use your own cables to connect your computer directly to the UX60 projector (see page 24).

Connecting Your Computer to the Wire Management Bundle

Your SMART Board 685ix interactive whiteboard system includes a wire management bundle specifically designed for connecting secondary computers such as a laptop. Place your computer on a flat surface near the interactive whiteboard system.

NOTES

- Measure the distance between your projector and the computer you want to connect. Make sure each cable is long enough, has plenty of slack and can be placed safely in your room without presenting a tripping hazard.
- If you need to place your computer further away from the interactive whiteboard system, consider purchasing the extension accessories listed on page 5.

To connect your computer to the wire management bundle

1. Connect your secondary computer to the wire management bundle's HD-DB15 (VGA) input connector, 3.5 mm audio connector and USB A plug.
2. Switch the projector's input source to **VGA2** by pressing the **Input** button on the ECP or remote control.

3. If you own a laptop it can experience a partial, scrolling or incorrectly displayed image. If this occurs, you need to enter your laptop's display recognition mode. Refer to your laptop's instructions for more information, or contact your laptop manufacturer's technical support department.

Installing SMART Notebook Software

Installing SMART Notebook Software

A software CD for Mac OS X operating system software or Windows® operating systems shipped in the box with the 685 interactive whiteboard. You must install the software before you can access all of your interactive whiteboard system's features. Check the SMART Support website for the latest software updates.

If SMART Board software or SMART Notebook software is already installed on your computer, take this opportunity to upgrade your software to ensure compatibility. SMART Notebook software upgrades and online Help are available at www.smarttech.com/support/software/index.asp. These pages also list the minimum hardware requirements for each software version.

Using a GoWire Cable with Your Interactive Whiteboard System

If you have a GoWire SMART Notebook Software Auto-launch Cable (USB-GW) you don't need to install SMART Notebook software on your computer. When connected to the source computer's USB receptacle, GoWire launches Notebook automatically on your computer, providing full access to all interactive whiteboard software tools without installing SMART Notebook software.

If you're using the wire management bundle to connect your computer, insert the USB A receptacle into that USB A plug. If you supply your own cable to connect to the ECP, insert the USB A receptacle into that USB A plug.

Chapter 5

Maintaining and Troubleshooting Your SMART Board 685ix Interactive Whiteboard System

This chapter provides basic maintenance and troubleshooting information for your SMART Board 685ix interactive whiteboard system, including methods for properly cleaning and preventing damage to your interactive whiteboard system. For issues not covered in this chapter, please contact your authorized SMART reseller or consult the SMART Support website.

- Maintaining Your SMART Board 685ix Interactive Whiteboard System (page 31)
  - Preventing Damage to Your Interactive Whiteboard (page 31)
  - Cleaning Your Interactive Whiteboard (page 31)
  - Cleaning the Pen Tray (page 32)
  - Cleaning the UX60 Projector (page 33)
- After Installing Your SMART Board 685ix Interactive Whiteboard System (page 34)
  - Adjusting Keystone Alignment (page 34)
  - Focusing the Image (page 35)
  - Aligning the Image (page 36)
  - Securing the Pen Tray and the Interactive Whiteboard (page 40)
  - Replacing the UX60 Projector's Lamp Module (page 41)

Part No. 99-00984-20 REV A0

- Troubleshooting Your SMART Board 685ix Interactive Whiteboard System (page 45)
  - System Warning Lights (page 45)
  - Video Format Compatibility Modes (page 47)
  - HD and SD Format Compatibility (page 47)
  - Video System Signal Compatibility (page 48)
  - RS-232 Connector Pin Assignments (page 50)

Maintaining Your SMART Board 685ix Interactive Whiteboard System

With proper care, your SMART Board interactive whiteboard will provide years of trouble-free service. For additional maintenance instructions and recommendations see your 600 series interactive whiteboard *Installation and User's Guide* (document 1414).

Preventing Damage to Your Interactive Whiteboard

Although the SMART Board 685 interactive whiteboard's surface is very durable, you can prevent damage to the interactive screen and other components.

CAUTION

- Do not use sharp or pointed objects, such as ballpoint pens or pointers, as writing tools.
- Do not use abrasive erasers or harsh chemicals when cleaning.
- Do not leave adhesive tape on the writing surface for extended periods. Lifting the tape may remove the coating that provides the interactive whiteboard's dry-erase capability.
- Avoid setting up and using your interactive whiteboard in an area with excessive levels of dust, humidity or smoke.

Cleaning Your Interactive Whiteboard

Follow these tips and procedures to keep the screen surface clean.

CAUTION

Do not allow cleaning liquids to flow between the lower frame and the writing surface or into the pen tray recesses.

TIPS

- Don't write on your interactive whiteboard with low-odor dry-erase markers, such as Sanford® EXPO2®, because their ink can be very difficult to remove. Use standard dry-erase (high-odor) markers that include a warning to use them only in well-ventilated areas.
- Erase dry-erase ink as soon as possible after use. The longer dry-erase ink is on the surface, the more difficult it is to remove.
- Shut down the computer or unplug the USB cable connecting the interactive whiteboard to the computer. Otherwise, you could accidentally start applications or scramble an attached computer's desktop icons when you clean the screen.

To remove dry-erase marker ink

1. Remove excess dry-erase dust with a damp lint-free cloth.
2. If dry-erase ink remains on the surface, use a household glass cleaner, such as Windex®, or a dry-erase marker cleaner.
3. Use isopropyl alcohol for stubborn stains and ghosting.

To remove permanent marker ink

Use a cleaner, such as EXPO Dry Erase Board Doctor, to write directly over the permanent marker ink, allow the solution to dry completely and then wipe clean.

OR

Use a high-odor dry-erase marker to write directly over the permanent marker ink and wipe with a lint-free cloth while the ink is still wet. If any ink remains, spray a lint-free cloth with a glass or whiteboard cleaner and wipe the area clean.

IMPORTANT

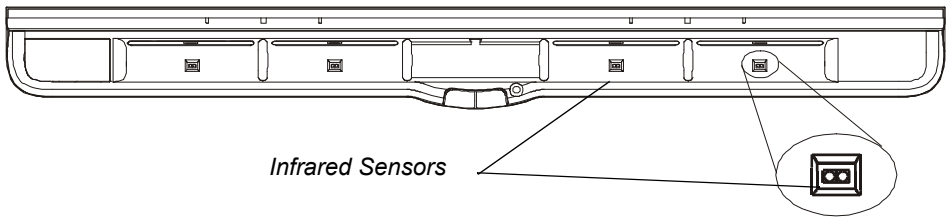
Do not use low-odor or non-scented dry-erase markers for this procedure, because they do not contain the appropriate solvents.

Cleaning the Pen Tray

If the infrared sensors in the bottom of the pen tray's recesses are obstructed, the sensors don't reliably detect when a pen or the eraser is removed or replaced. If an LED indicator doesn't turn on, the infrared sensor is obstructed and the affected tool won't work on the interactive whiteboard.

NOTES

- There are no user serviceable parts inside the pen tray. Only qualified personnel should disassemble the pen tray.
- If dust or a small object prevents you from pressing a button, or causes a button to stick, remove the object carefully.



To clean a sensor

Moisten a cotton swab with a household glass cleaner, such as Windex, and carefully clean the infrared transmitter and receiver.

Cleaning the UX60 Projector

WARNING

Cleaning a wall-mounted projector can result in a fall or injury. Use caution when climbing a ladder, or remove the projector from the wall-mounting bracket to clean it.

CAUTIONS

- Before you clean the UX60 projector, put the system into Idle mode by pressing the power button twice on the ECP or remote control, and allow the bulb to cool for at least 30 minutes.
- Do not spray cleaners, solvents or compressed air directly on the projector.
- Do not allow liquids or commercial solvents of any kind to flow into the projector base or head. Do not use spray cleaners or solvents near any part of the projector, because they can damage or stain the unit.
- Spraying the system could spread a chemical mist on some of the projector's components and lamp, resulting in damage and poor image quality.
- Do not scrub the surface of the mirror with the supplied cleaning cloth. Use the cloth with a light touch.

IMPORTANT

Wipe the exterior of the projector using a lint-free cloth.

To clean the projector's mirror

1. Use a bellows bulb or air blower bulb (commonly found in audio-visual supply stores) to blow off dust. Never touch the mirror with your hands or a brush.
2. If wiping the mirror is unavoidable, wear protective gloves and gather the cleaning cloth into a ball.
3. Gently run the cleaning cloth across the mirror like you would a feather duster.

To clean the projector's lens

1. Use a bellows bulb or air blower bulb (commonly found in audio-visual supply stores) to blow off dust. Never touch the lens with your hands or a brush.
2. If wiping the mirror is unavoidable, wear protective gloves and arrange the cleaning cloth into a ball.
3. Gently run the cleaning cloth across the lens from the center to the outer area, using the cleaning cloth like you would a feather duster.

After Installing Your SMART Board 685ix Interactive Whiteboard System

Adjusting Keystone Alignment

Keystone errors occur when the projected image isn't perpendicular to the screen. Vertical keystone errors can occur when you mount the UX60 projector and the SMART Board 685 interactive whiteboard on an uneven surface or a wall that has obstructions.

From the projector, the image path is shorter along the top.

From the projector, the image path is shorter along the bottom.

The image appears shorter across the top when the image path's distance from the projector to the top of the screen is shorter than the distance to the bottom of the screen. The image appears shorter across the bottom when the image path's distance from the projector to the bottom of the screen is shorter than the distance to the top of the screen.

Horizontal keystone errors can occur when you swivel the UX60 projector too far from the SMART Board 685 interactive whiteboard's vertical center, when you mount the projector and the interactive whiteboard on an uneven surface, or when the interactive whiteboard is slightly closer to the projector on one side than the other.

From the projector, the image path is shorter along the right side.

From the projector, the image path is shorter along the left side.

The image appears shorter across the right side when the distance from the projector to the right of the screen is shorter than the distance to the left of the screen. The image appears shorter across the left side when the distance from the projector to the left of the screen is shorter than the distance to the right of the screen.

Adjust the interactive whiteboard side to side to center the projected image, as illustrated in the installation document. This eliminates many keystone errors. If your installation environment prevents you from moving the interactive whiteboard, you can adjust the projector's adjustment module for optimal image alignment.

WARNING

- Two people are required to mount the projector and the interactive whiteboard on a wall because they could be too heavy for one person to maneuver onto their wall-mounting brackets.

NOTES

- If you move the interactive whiteboard system to a new location, you must readjust it.
- If your projector requires service, you must adjust the replacement projector.

Focusing the Image

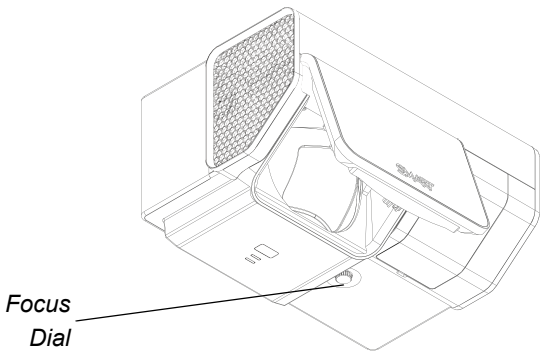
To focus the projected image, use the focus dial, located on the bottom of the UX60 projector (when the projector is facing downward).

NOTE

Ensure that you remove the plastic lens cover from the projector.

To focus and adjust the image

Turn the focus dial clockwise or counterclockwise until the image is in focus.



Aligning the Image

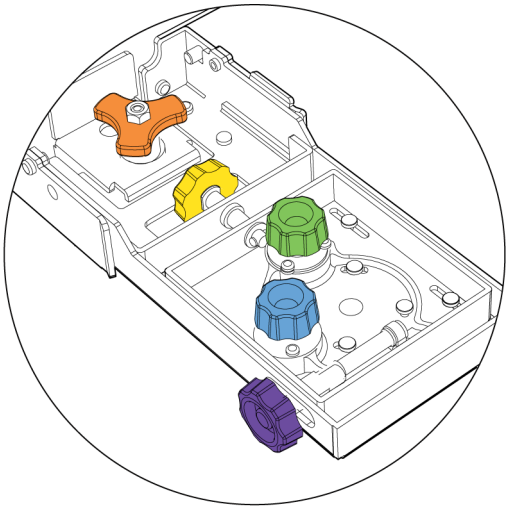
Use this procedure to obtain a rectangular image that is slightly smaller than the interactive whiteboard's screen.

IMPORTANT

- Do not use the projector's on-screen menu options to make image adjustments.
- Do not touch the projector lens or mirror. This can disturb the focus or quality of image that your projector displays.

NOTES

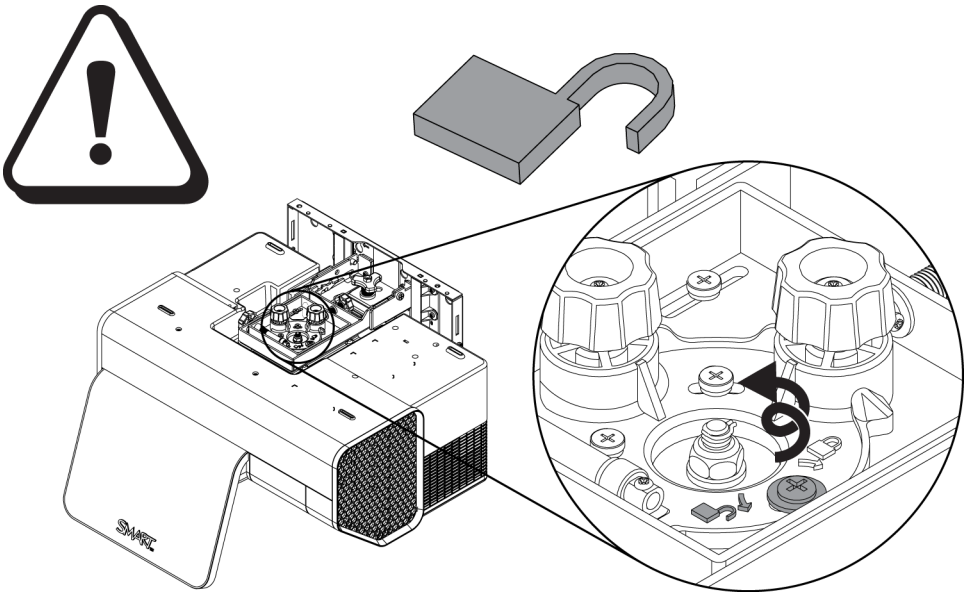
- Project a computer image (set to the proper resolution) while performing the following steps.
- If you don't have a computer, use the projector's default background so that you can see the full projected image clearly.
- The following diagram shows the color-coded control knobs on the top of the projector's adjustment module. Use only these control knobs to adjust the projector's image, and always unlock the locking ring to adjust the projector's image.



- SMART doesn't recommend adjusting the digital keystone adjustment within the projector. Instead, use the mechanical adjustment module described in this section.

To align the image

1. Use a screwdriver to unscrew (but not remove) the locking ring screw on the top of the projector's adjustment module. This unlocks the controls to adjust the mirror.



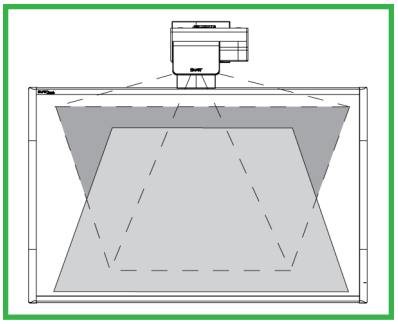
WARNING

When adjusting the projector's image, only loosen the locking screw next to the lock and unlock symbols (see the previous illustration in grey). Never loosen other screws or loosen the center nut attached to the projector bolt as your projector may fall.

2. Adjust the projected image's vertical keystoning.

   a. Turn the green knob clockwise if the bottom edge of the projected image is narrower than the top edge of the projected image, and the sides of the projected image slope inward toward the bottom of the projected image.

   b. Turn the green knob counterclockwise if the bottom edge of the projected image is wider than the top edge of the projected image, and the sides of the projected image slope outwards toward the bottom of the projected image.



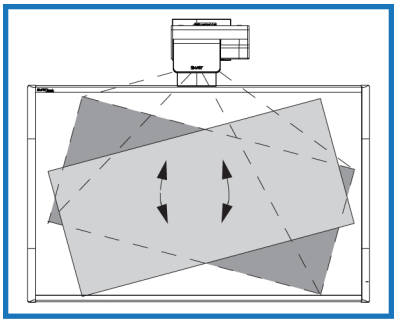
NOTE

Ignore the position of the rest of the image in relation to the interactive whiteboard during this step.

3. Adjust the projected image's horizontal alignment.

   a. Turn the blue knob clockwise if the image is tilted with the right edge higher than the left, until the top and bottom edges of the projected image are horizontal.

   b. Turn the blue knob counterclockwise if the image is tilted with the left edge higher than the right, until the top and bottom edges of the projected image are horizontal.



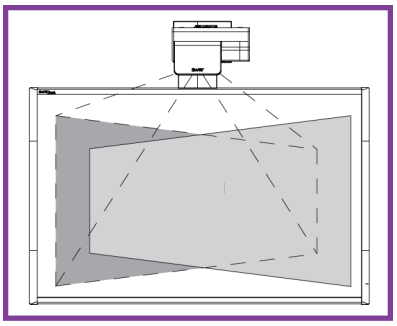
NOTE

Ignore the position of the rest of the image in relation to the interactive whiteboard during this step.

4. Adjust the projected image's horizontal keystoning.

   a. Turn the purple knob clockwise if the left edge of the projected image is shorter than the right edge of the projected image, and the sides of the projected image slope inward toward the left.

   b. Turn the purple knob counterclockwise if the right edge of the projected image is shorter than the left edge of the projected image, and the sides of the projected image slope inward toward the right.

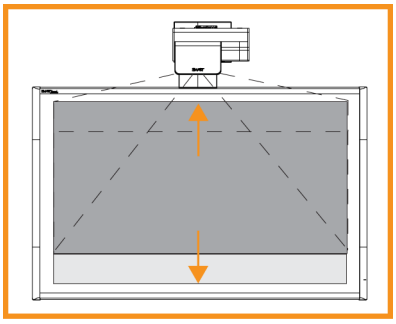


NOTE

Ignore the position of the rest of the image in relation to the interactive whiteboard during this step.

5. Repeat steps 2 to 4 in small increments until you have an image that is square and parallel to the board. Once you are satisfied with the image, proceed to step 6.

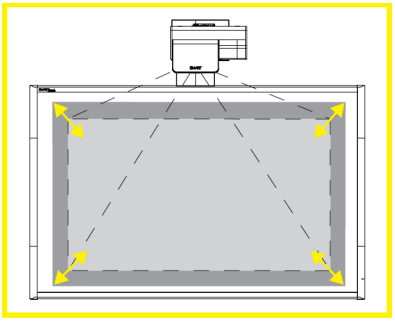
6. Adjust the height of the projected image.



   a. Turn the orange knob clockwise if the bottom edge of the image is too low, until the image's vertical position is centered on the interactive whiteboard.

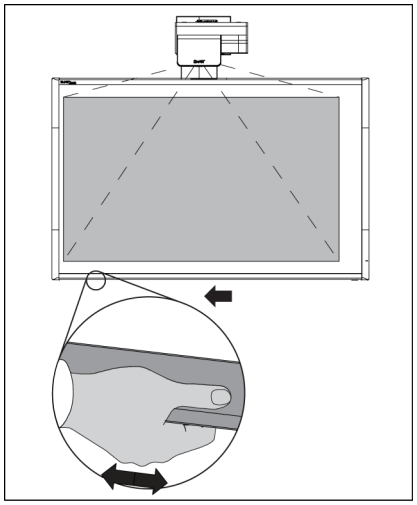
   b. Turn the orange knob counterclockwise if the top edge of the image is too high, until the image's vertical position is centered on the interactive whiteboard.

7. Adjust the scaling of the image by turning the yellow knob clockwise or counterclockwise to make the image larger or smaller on the interactive whiteboard.



8. Turn the focus dial clockwise or counterclockwise until the image is in focus.

9. You might need to re-center your interactive whiteboard. Perform this procedure only if absolutely necessary.



   a. Remove the pen tray and pen tray screws behind the pen tray.

   b. Pull the board from side to side, while holding the bottom bezel of the interactive whiteboard, to center the board to the projected image.

   c. Refer to your *SMART Board 685ix Interactive Whiteboard System Textless Installation Guide* (document 137394), for instructions on drilling holes for attaching new anchors for the interactive whiteboard.

   d. Attach the pen tray screws to the new anchor location, and then attach the pen tray.

10. Use a screwdriver to tighten the locking ring screw on the top of the projector's adjustment module when you're satisfied with the projected image's location on the interactive whiteboard. This locks the controls to adjust the mirror.

IMPORTANT

If you do not secure the locking ring screw, the projector's adjustment controls can slip out of place, and you will have to repeat the image alignment procedure.

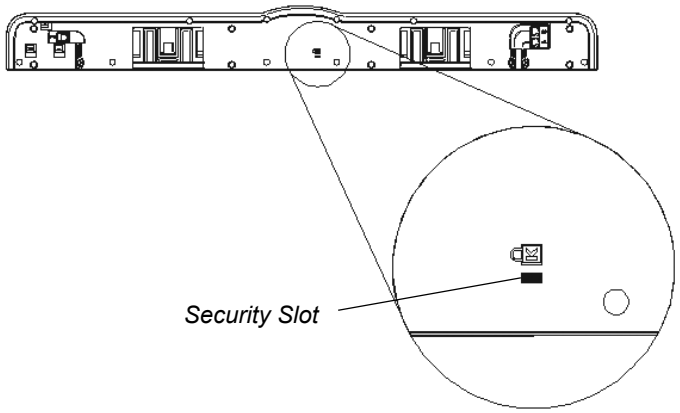
Securing the Pen Tray and the Interactive Whiteboard

Because the pen tray that comes with your SMART Board interactive whiteboard is detachable, you might want to safeguard it—and the interactive whiteboard at the same time—by anchoring it with a security cable.

IMPORTANT

- Securing the pen tray can provide theft deterrence for the interactive whiteboard.
- The screws that secure the interactive whiteboard to the wall are located directly behind the pen tray. You must remove the pen tray before you can remove the interactive whiteboard. When you secure the pen tray, you also secure the interactive whiteboard.

On the bottom of the pen tray is a security slot that accommodates a security cable, such as a Kensington® lock.



To lock the pen tray to the interactive whiteboard

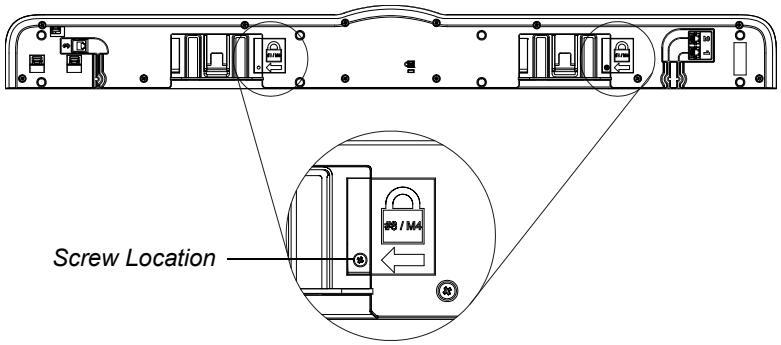
1. Loop the security cable behind the pen tray brackets before you screw them to the wall, and then thread the lock end of the cable through the loop end of the cable.
2. Verify that the cable is tight enough to prevent you from removing the pen tray while the lock is in place.

3. Install the pen tray.
4. Insert the prong end of the security cable into the security slot, and then complete the pen tray installation.

Because you can remove the pen tray without tools, you may want to securely attach it to its brackets.

To secure the pen tray to the pen tray brackets

Insert two No. 8/M4 screws (not included) into the holes shown in the following illustration.



NOTE
Older pen trays don't have this feature.

Replacing the UX60 Projector's Lamp Module

Eventually the lamp module will dim, and a message will appear reminding you to replace the lamp. Make sure you have a replacement projector lamp before proceeding with the following instructions.

WARNINGS

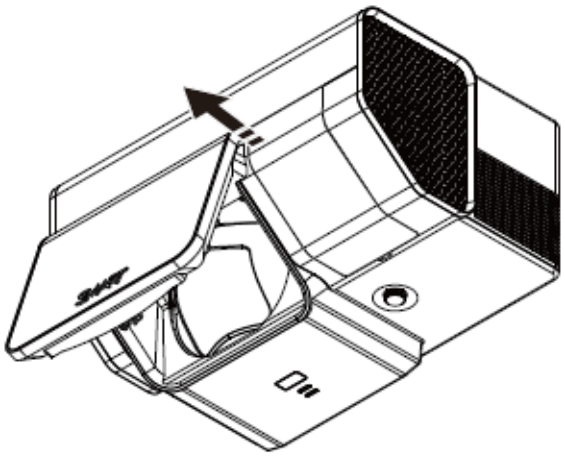
- This projector detects its remaining lamp life. Replace the lamp when a lamp life warning message appears. If you continue to use the projector after the replacement message appears, the lamp can shatter or burst, scattering glass throughout the projector.
- If the lamp has shattered or burst:
  - Call an authorized SMART reseller for instructions. Do not attempt to replace the lamp.
  - Do not touch the glass fragments because they can cause injury.
  - Leave and then ventilate the area where the lamp shattered or burst.

  - Wash your hands thoroughly if you have come into contact with lamp debris.
  - Thoroughly clean the area around the projector, and discard any edible items placed in that area because they could be contaminated.
- Replacing the lamp in a wall-mounted projector can result in a fall or injury. Use caution when climbing a ladder, or remove the projector from the wall-mounted bracket to replace the lamp.
- Uncovering the lamp while the projector is mounted on the wall-mounting bracket can lead to product damage or personal injury from falling pieces of glass if the lamp is broken.
- When replacing the projector lamp:
  - Turn the projector off and wait 30 minutes for the lamp to cool completely (or before removing the projector from the wall-mounting bracket, if necessary).
  - Do not remove any screws other than those specified in the lamp replacement instructions.
  - Wear protective eyewear while changing the lamp. Failure to do so can cause injury or loss of eyesight if the lamp shatters or bursts.
  - Use only replacement lamps approved by SMART Technologies. Contact your authorized SMART reseller for replacement parts.
  - Never replace the lamp assembly with a previously used lamp assembly.
  - To prevent premature lamp failure or exposure to mercury, always handle the fragile lamp assembly with care. Use gloves when touching the lamp. Do not touch the lamp with your fingers.
  - Recycle or dispose of the lamp as hazardous waste, in accordance with local regulations.

To remove the old lamp

1. Turn the power off by pressing the power button twice on the remote control or the ECP.
2. Wait at least 30 minutes for the projector to cool down.
3. Unplug the power cable from the wall outlet.

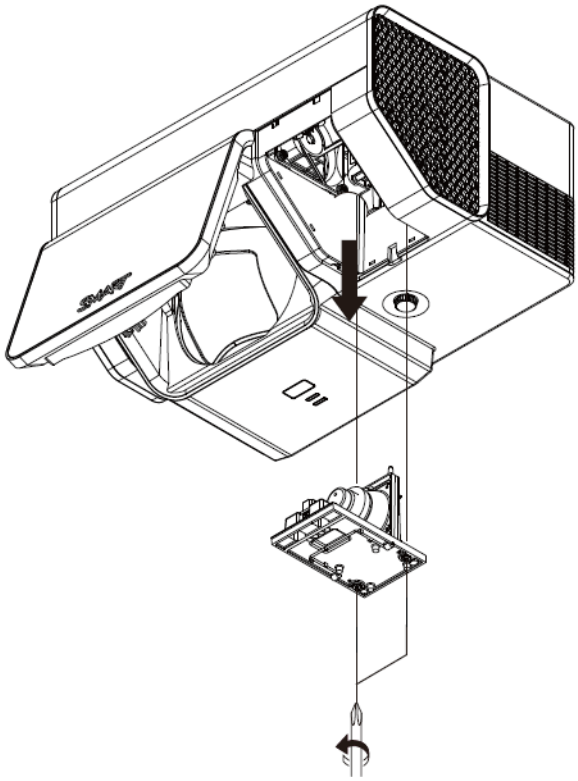
4. Pull the lamp cover forward and remove it from the projector. Put the lamp cover in a safe place.



TIP

If the cover is difficult to remove, insert a flat screwdriver or small coin into the slot on the bottom of the lamp cover to gently pry the cover open.

5. Use a Phillips® screwdriver to loosen the two captive screws from the bottom of the lamp module.



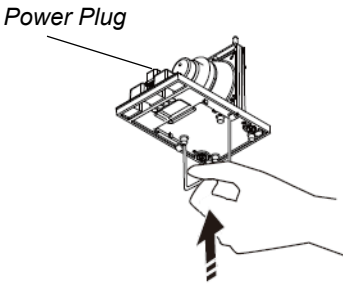
NOTE

Captive screws can't be removed, but they must be loose. Don't try to remove the screws.

6. Use the handle on bottom of the lamp module to slide out the lamp and remove it from the projector.

To put the new lamp module into the projector

1. Take the new lamp module out of its packaging.
2. Carefully place the new lamp module into the projector using the handle on the top of the module. When you guide the lamp module into its slot, hold it vertically, and ensure the power plug makes contact with the power receptacle on the projector by squeezing the power end of the lamp module gently against the projector.



3. Use the Phillips screwdriver to secure the captive screws into the lamp module.
4. Carefully slide the lamp cover back onto the projector.
5. Connect the power cable to the wall outlet.
6. Confirm that the projector is operating and that the lamp module is correctly installed, by pressing the power button once on the remote control or ECP.
7. Put the old lamp in a secure container. Handle the old lamp gently until you dispose of or recycle it.

Troubleshooting Your SMART Board 685ix Interactive Whiteboard System

Use the following charts for basic troubleshooting of your SMART Board 685ix interactive whiteboard system. If you're unable to restore the system to a normal operating state, record the warning lights, and call your authorized SMART reseller.

System Warning Lights

ECP Ready Light and System Status

The ECP's main power button also functions as a ready light.

Ready Light	Status
Off	The projector system isn't receiving power. Confirm that the projector is on. Check your power cord and the ECP's 4 pin powered-mini-DIN connections at the projector as well as the power supply. If nothing changes after you check your connectors and power supply, call your authorized SMART reseller.
Solid amber	The projector is receiving power but is turned off.
Flashing green	The projector is receiving power and is turning on.
Solid green	The projector is on, the ECP is receiving power and is communicating with the projector.
Flashing amber	The interactive whiteboard system is about to turn off.

Integrated Interactive Whiteboard Ready Light Status

The UX60 projector and the ECP integrate the interactive whiteboard's ready light status. These status lights are different from what you normally see on a SMART Board 685 interactive whiteboard.

Interactive Whiteboard Ready Light	Status
Off	The interactive whiteboard isn't receiving power. Confirm that the projector is on. Confirm that the interactive whiteboard's USB cable is connected to the ECP. On the projector's input/output panel, check the ECP's 4-pin powered-mini-DIN connection. If nothing changes after you check your connectors, call your authorized SMART reseller.

Interactive Whiteboard Ready Light	Status
Solid red	The projector is receiving power but isn't communicating with a computer. On the projector's input/output panel, check the ECP's 7-pin mini-DIN connections at the projector. Confirm that the projector input selection is set to the correct video input source (VGA1 for primary computer, VGA2 for secondary computer). Confirm that the USB connection from the computer is connected to the appropriate computer connection on the ECP or wire management bundle.
Solid green	The interactive whiteboard is on and communicating with your computer.
Flashing green	The interactive whiteboard is on and communicating with your computer, but it's in Mouse mode. Confirm that SMART software is installed on your computer.
Flashing amber	The interactive whiteboard system is turning on, is in service mode or it has detected a firmware error. On the projector's input/output panel, check the ECP's 4-pin powered-mini-DIN connection. If nothing changes after you check your connectors, call your authorized SMART reseller.

Projector Ready Lights and Projector Status

The UX60 projector's two indicator LED lights (Power and Diagnostic) are located on the boom-mounted projector. Specific light sequences convey information about the state of your projector, including warning messages and issues. The following table describes projector warning messages and issues.

NOTE

Contact your authorized SMART reseller if the Fan Failure Error or Color Wheel Failure Error appears.

IMPORTANT

After you resolve your projector's issue, unplug and then plug in your UX60 projector's power cable to clear the indicator light sequence and reset your projector's status.

Message	Power LED (Green/Amber)	Diagnostic LED (Red)
Powering	Flashing green	Off
On (Lamp On)	Green	Off

Message	Power LED (Green/Amber)	Diagnostic LED (Red)
Cooling	Flashing amber	Off
Error (Temperature Exceeded)	Off	Flashing red
Error (Fan Failure)	Off	Solid red
Error (Color Wheel Failure)	Off	Solid red
Error (Lamp Failure)	Solid amber	Flashing red

Video Format Compatibility Modes

The following table lists VESA RGB video format standard compatibility.

Resolution	Mode	Refresh Rate (Hz)	H-Frequency (kHz)	Pixel Clock (MHz)
1600 × 1200	UXGA_60	75	75	78.75

HD and SD Format Compatibility

The following table lists high definition and standard definition format signal compatibility.

Signal Format	fh (kHz)	fv (Hz)
480i (525i) @ 60 Hz	15.73	59.94
480p (525p) @ 60 Hz	31.47	59.94
576i (625i) @ 50 Hz	15.63	50
576p (625p) @ 50 Hz	31.25	50
720p (750p) @ 60 Hz	45	60
720p (750p) @ 50 Hz	37.5	50
1080i (1125i) @ 60 Hz	33.75	60
1080i (1125i) @ 50 Hz	28.13	50
1080p (1125p) @ 60 Hz	67.5	60
1080p (1125p) @ 50 Hz	56.25	50

Video System Signal Compatibility

The following table lists video system signal compatibility, particularly those delivered over S-Video and Composite connectors.

Video Mode	fh (kHz)	fv (Hz)	fsc (MHz)
NTSC	15.73	60	3.58
PAL	15.63	50	4.43
SECAM	15.63	50	4.25 or 4.41
PAL-M	15.73	60	3.58
PAL-N	15.63	50	3.58
PAL-60	15.73	60	4.43
NTSC4.43	15.73	60	4.43

Appendix A

Hardware Environmental Compliance

SMART Technologies supports global efforts to ensure that electronic equipment is manufactured, sold and disposed of in a safe and environmentally friendly manner.

Waste Electrical and Electronic Equipment Regulations (WEEE Directive)

Waste Electrical and Electronic Equipment regulations apply to all electrical and electronic equipment sold within the European Union.

When you dispose of any electrical or electronic equipment, including SMART Technologies products, we strongly encourage you to properly recycle the electronic product when it has reached end of its life. If you require further information, please contact your reseller or SMART Technologies for information on which recycling agency to contact.

Restriction of Certain Hazardous Substances (RoHS Directive)

This product meets the requirements of the European Union's Restriction of Certain Hazardous Substances (RoHS) Directive 2002/95/EC.

Consequently, this product also complies with other regulations that have arisen in various geographical areas, and that reference the European Union's RoHS directive.

Batteries

Batteries are regulated in many countries. Check with your reseller to find out how to recycle used batteries.

Packaging

Many countries have regulations restricting the use of certain heavy metals in product packaging. The packaging used by SMART Technologies to ship products complies with applicable packaging laws.

China's Electronic Information Products Regulations

China regulates products that are classified as EIP (Electronic Information Products). SMART Technologies products fall under this classification and meet the requirements for China's EIP regulations.

U.S. *Consumer Product Safety Improvement Act*

The United States has enacted the *Consumer Product Safety Improvement Act* which limits the lead (Pb) content in products. SMART Technologies is committed to complying with this initiative.

Appendix B
Customer Support

Online Information and Support

Visit www.smarttech.com/support to view and download user's guides, how-to and troubleshooting articles, software and more.

Training

Visit www.smarttech.com/trainingcenter for training materials and information about our training services.

Technical Support

If you experience difficulty with your SMART product, please contact your local reseller before contacting SMART Technical Support. Your local reseller can resolve most issues without delay.

NOTE

To locate your local reseller, visit www2.smarttech.com/st/en-US/Where+to+Buy.

All SMART products include online, telephone, fax and e-mail support:

Online	www.smarttech.com/contactsupport
Telephone	+1.403.228.5940 or Toll Free 1.866.518.6791 (U.S./Canada) (Monday to Friday, 5 a.m. – 6 p.m. Mountain Time)
Fax	+1.403.806.1256
E-mail	support@smarttech.com

Shipping and Repair Status

Contact SMART's Return of Merchandise Authorization (RMA) group, Option 4, +1.866.518.6791, for shipping damage, missing part and repair status issues.

General Inquiries

Address	SMART Technologies 3636 Research Road NW Calgary, AB T2L 1Y1 CANADA
Switchboard	+1.403.245.0333 or Toll Free 1.888.42.SMART (U.S./Canada)
Fax	+1.403.228.2500
E-mail	info@smarttech.com

Warranty

Product warranty is governed by the terms and conditions of SMART's "Limited Equipment Warranty" that shipped with the SMART product at the time of purchase.

Registration

To help us serve you, register online at www.smarttech.com/registration.

Index

A

Adjusting
  Keystone alignment, *34*
Audio cable, *5*

B

batteries, *49*
Before installing your SMART Board 685ix interactive whiteboard system, *21*
  Environmental requirements, *21*
Bluetooth, *7*

C

Cables
  Optional accessories, *7*, *28*
Cat 5, *7*
Cautions
  Dust, *21*
  Electrostatic discharge, *21*
  Humidity, *20*
  Water and fluid resistance, *20*
Cleaning
  Cleaning cloth kit, *5*
  Pen tray, *32*
Components
  UX60 projector, *10*
Consumer Product Safety Improvement Act, 50
contact information, *52*
Controlling your 685ix interactive whiteboard system, *9*
covered electronic devices, *50*
customer support, *51–52*

D

Damage
  preventing, *31*
documentation, *51*
dry-erase markers, *5*

E

ECP assembly, *5*
ECP cable, *5*
EIP regulations, *50*
Environmental compliance, *See* Hardware environmental compliance
Environmental requirements, *20*
  Dust and scratching, *21*
  Electrostatic discharge, *21*
  Humidity, *20*
  Water and fluid resistance, *20*
Eraser, *5*
European Union regulations, *49*
Extended control panel
  Functions, *16*
Extended control panel (ECP) assembly
  overview, *5*

G

general inquiries, *52*
GoWire, *7*

H

Hardware environmental compliance, *49–50*
Hardware kit, *5*

I

Important Information, *i*
inquiries, *52*
Installing
  Adjusting keystone alignment, *34*
  Environmental requirements, *21*

K

Keystone
  Definition, *34*

L

Limited Equipment Warranty, *52*

M

Main projector, *5*
markers, *5*

O

online support, *51*
Optional accessories
  SBA, *7*

P

packaging, *50*
Pen tray
  cleaning, *32*
  tools, *5*
pens, *5*

R

registration, *52*
regulatory compliance, *See* hardware environmental compliance
Remote control
  Battery, *12*
Remote control, *5*
  overview, *5*
RoHS directive, *49*

S

Safety warnings, *i*
Security
  Cable, *40*
  Securing the pen tray to the interactive whiteboard, *40*
Serial conversion module, *7*
SMART Board 600 series interactive whiteboard
  Optional accessories, *7*, *28*
SMART Board 685 interactive whiteboard
  Features, *2*
SMART Board 685ix interactive whiteboard system
  Features, *2*
  Optional accessories, *7*
  Recommended mounting height, *22*
  Transporting, *vii*
SMART Support, *51–52*
System warning lights, *45*

T

Technical Support, *51*
training, *51*
Troubleshooting
  Warning lights, *45*

U

U.S. regulations, *50*
USB, *7*
user's guides, *51*
UX60 Projector
  Projector connection diagram, *11*
  Remote control, *7*
  System features, *3*
  Standard accessories, *5*

V

VGA cable, *5*
video format compatibility, *3*
video system compatibility, *3*

W

Wall mounting assembly, *5*
Warning lights, *45*
warranty, *52*
WEEE directive, *49*
whiteboard pens, *5*
Wire plate cover, *5*

Contact SMART Technologies

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